

# On Workplace-based Assessment in Clerkship

An Overview for Clerkship Directors, Faculty & Residents teaching in clerkship



**College of Medicine**  
Tucson

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## INTRODUCTION

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### The Purpose of this Memo

This memo is intended to make sure that we are using the same language for discussing workplace-based assessment and to help in developing such an assessment for use in clerkship. The overarching goal is to explore how we can use this approach to improve how we measure student performance, how we give formative feedback to students, and reduce unconscious bias in clerkship assessment.

## WORKPLACE-BASED ASSESSMENT: A FAMILIAR TOOL IN GME

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Most clinicians have participated in some form of workplace-based assessment, whether as a learner or an instructor, or both. The goal is to give timely, valuable feedback based upon real time observations of clinical performance.

For example, the American Board of Internal Medicine (ABIM) developed the Mini Clinical Evaluation Exercise, or Mini-CEX, to promote workplace-based assessments in residency.

The Mini-CEX is a 10- to 20-minute direct observation assessment or “snapshot” of a trainee-patient interaction. Faculty are encouraged to perform at least one per clinical rotation. To be most useful, faculty should provide timely and specific feedback to the trainee after each assessment of a trainee-patient encounter. (ABIM, ND)

The form is short and has a 3-point scale for assessing essential skills, such as interviewing patients, and communication skills ([ABIM Mini-CEX](#), ND), and includes a small space for feedback.

**Mini-Clinical Evaluation Exercise (CEX)**

Evaluator: \_\_\_\_\_ Date: \_\_\_\_\_

Resident: \_\_\_\_\_  R-1  R-2  R-3

Patient Problem/Dx: \_\_\_\_\_

Setting:  Ambulatory  In-patient  ED  Other \_\_\_\_\_

Patient: Age: \_\_\_\_\_ Sex: \_\_\_\_\_  New  Follow-up

Complexity:  Low  Moderate  High

Focus:  Data Gathering  Diagnosis  Therapy  Counseling

1. Medical Interviewing Skills ( <input type="checkbox"/> Not observed)								
1	2	3	4	5	6	7	8	9
UNSATISFACTORY			SATISFACTORY			SUPERIOR		
2. Physical Examination Skills ( <input type="checkbox"/> Not observed)								
1	2	3	4	5	6	7	8	9
UNSATISFACTORY			SATISFACTORY			SUPERIOR		
3. Humanistic Qualities/Professionalism								
1	2	3	4	5	6	7	8	9
UNSATISFACTORY			SATISFACTORY			SUPERIOR		
4. Clinical Judgment ( <input type="checkbox"/> Not observed)								
1	2	3	4	5	6	7	8	9
UNSATISFACTORY			SATISFACTORY			SUPERIOR		

The Mini-CEX  
(ABIM)

## WHAT IS WORKPLACE-BASED ASSESSMENT?

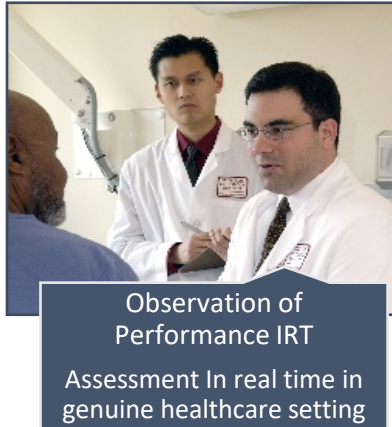
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“Workplace-based assessment (WPBA) consists of direct observation of trainee performance in clinical settings, followed by the provision of focused feedback,” (Norcini et al. 2003, ).

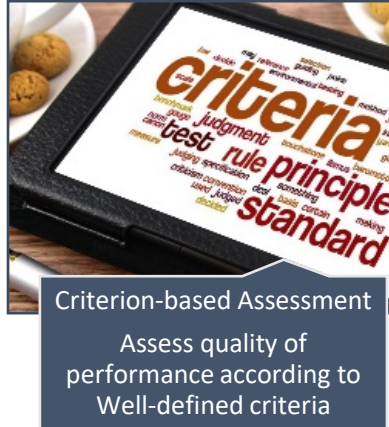
In other words, workplace-based assessment is the “assessment of what the trainee ‘does in real life ‘on-the-job’” (Hamdy, p. 58). This refers to assessment that occurs while students are engaged in patient care or other activities in actual healthcare settings. Workplace-based assessments are based on actual observations and measured against established criteria for demonstrating achievement of learning objectives. In other words, workplace-based assessment is fact-based and deliberately avoids assessment based on generalized impressions or opinions without more.

## THREE CRITICAL COMPONENTS OF WORKPLACE-BASED ASSESSMENT

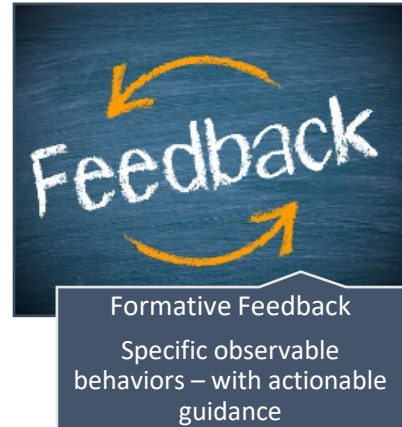
There are three components of workplace-based assessment: 1) Observation of clinical performance in real time; (2) use of a criterion-based assessment; and (3) provision of formative feedback.



**Observation of Performance IRT**  
Assessment In real time in genuine healthcare setting



**Criterion-based Assessment**  
Assess quality of performance according to Well-defined criteria



**Formative Feedback**  
Specific observable behaviors – with actionable guidance

### Component 1: Real Time Observation in Real Situations

Assessing medical students while they engage in learning activities in clinical settings qualify as events for workplace-based assessment. For example, workplace-based assessment can be conducted while a medical student interviews a patient, performs a patient exam, presents a patient or discusses with the healthcare team how to interpret diagnostic tests and generate a plan of care. Observed Structured Clinical Exams (OSCE) in clerkship would not be considered a type of workplace-based assessment, because the medical student is performing the task or demonstrating knowledge in a simulated context, rather than in a genuine patient care or other clinical setting.

### Component 2: Criterion-based Assessment

Criterion-based performance means that we assess student performance with respect to established standards for performance, and not in comparison with other learners' performance (Bond, 1996). For example, assessing an individual student in light the performance of other students in that clerkship or rotation, is called "normative" assessment. Using this approach can cause variation in rater (faculty) assessment of student performance, variation not connected to actual performance.

In addition, the normative approach to assessment, particularly when done "off the cuff", is impossible for a student to ascertain and is, in effect, an unpublished standard. No student would be able to determine how they would be assessed. Instructors also would not know what the standard would be until they had observed all the students in a given group. For faculty, fellows and residents who do not have the opportunity to observe everyone in the group, this would be invalidate the application of a normative approach. Some residents are new to teaching and would not have any experience other than their own, and so might substitute their self-assessment.

Normative assessment in clerkship, then, allows for more variation attributable to error and opinion, rather than to the unevenness of student performance itself.

**Criterion-based assessment** intends to remove this kind of error and to avoid assessment based on mere opinion without a factual basis. The variability in performance among a group of students would be irrelevant to the assessment of a particular student because we would measure whether the student achieved the learning objectives, not whether they performed as well as the average student.

Since our goal is to ensure that students understand the expectations for performance, it is important for them to know how performance will be assessed. Such criteria also help those who teach in clerkship as they can focus their efforts on guiding students toward achievement of those objectives.

Workplace-based assessment relies on criterion-referenced principles. Below is a chart to offer a summary of the differences between the two approaches to assessment.

*Table 1 Criterion-referenced vs. Norm-referenced Assessment (see, Bond, 1996).*

	<b>Criterion-referenced Assessment</b>	<b>Norm-referenced Assessment</b>
<b>HOW</b>	<ul style="list-style-type: none"> <li>• Criterion-referenced assessments measure whether and how well a student has mastered a specific learning goal (or objective).</li> <li>• Rubric defines the criteria upon which students are assessed and assist instructors in conducting the assessment.</li> </ul>	<ul style="list-style-type: none"> <li>• Norm-referenced tests assess compares individual student performance with the performance of a group.</li> </ul>
<b>WHY</b>	<ul style="list-style-type: none"> <li>• To find out how whether students know and can do what we expect them to within the context and time frame established</li> </ul>	<ul style="list-style-type: none"> <li>• To discriminate between high and low achievers.</li> </ul>
<b>WHAT does it mean?</b>	<ul style="list-style-type: none"> <li>• The score represents the individual student’s performance as compared with established (written) standards for achievement. How other students perform is irrelevant.</li> </ul>	<ul style="list-style-type: none"> <li>• The score represent how the individual student performed in comparison with other students’ performance.</li> </ul>

Who benefits from Criterion-based Assessment?

Everyone who is engaged in criterion-based assessment has the potential to benefit. There are direct and indirect beneficiaries.

*➤ Direct Beneficiaries: The Learner & Instructor*

The learner and instructor directly participate in criterion-based assessment and may gain the most direct rewards. For example, the learner understands they must do to meet expectations. In conjunction with workplace-based assessment, the student also receives actionable guidance for improving performance. Ultimately, this increase their chances of success in clerkship. The criteria clarify for the instructor how to “measure” an individual student’s performance. Instructors do not need to compare students to others. Therefore, the lack of experience in assessing other students does not affect assessment.

The instructor focuses on specific skills and knowledge that ought to be developed. The criteria also serve as a reminder of what students should be taught and can help faculty focus on goals for future teaching as well as to help students achieve success.

*➤ Indirect Beneficiaries: Patients & the College Community*

Indirect beneficiaries are the patients for whom our faculty, fellows and residents provide healthcare and the broader College of Medicine-Tucson community. The more successful our medical students become in developing clinical skills, integrating basic and clinical sciences in practice, patient communication and related activities, the better-served patient populations will be in clerkship. As students become residents

and attendings they carry with them an effective model for teacher/learner dynamics and fair, fact-based assessment.

In addition, the college community also benefits because criterion-based assessment helps us to achieve LCME compliance by demonstrating that we have established clear expectations for student performance in clerkship and provide formative feedback that supports successful achievement.

### Component 3: Formative feedback

It is important to define feedback by what it is and what it is *not*, and then to describe what makes feedback *formative*.

#### Feedback vs. Evaluative statements

Evaluation and feedback are not the same thing. Evaluation may not incorporate feedback, and feedback is much more than evaluative remarks. Evaluative remarks offer a sense of how well or poorly the student is performing in general terms. Comments such as “great job” or “needs work”, without more, do not provide information the student can act upon to either continue excellent performance or improve poor performance (see, Gigante, 2011).

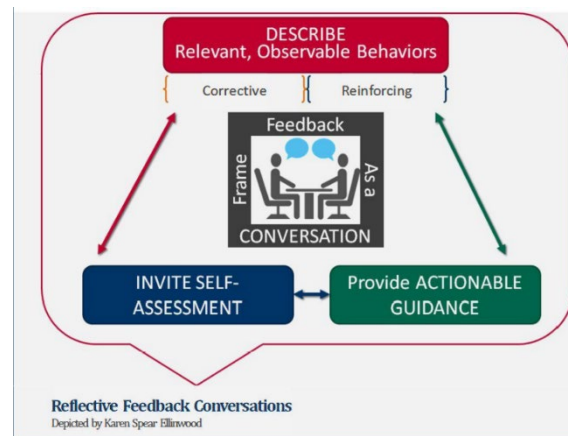
In contrast, feedback tells the learner what they did well and what they need to improve, with a level of detail that enables them to make changes or to know which behaviors or practices they should continue.

Nicol and McFarlane-Dick (2006) identified seven principles of “good feedback practice”, emphasizing that this supports effective teacher/learner rapport and provides opportunities to close the gap between current and desired performance and/or to clarify expectations for performance. Hewson and Little (1998) reviewed research on feedback to identify factors that influenced whether learners found feedback to be “helpful”. Providing specific information about what a learner did or did not do, clarifying expectations for performance and offering guidance for further growth or how to improve performance, were all considered “helpful” aspects of feedback.

#### What makes feedback formative?

In health sciences education, particularly in clinical education, Cantillon and Sargeant (2008) established an evidence-based model for giving constructive feedback. The research on feedback since the introduction of their reflective feedback conversation model continues to support their recommended approach. Cantillon & Sargeant (2008) emphasized that feedback is part of the learning experience, which is well-aligned with the purpose of workplace-based assessment.

Feedback should describe specific observable behaviors that represent something the learner achieved well and something they might need to improve. Feedback should invite the learner to reflect on performance and self-assess, as well as clarify expectations for performance, and offer actionable guidance for improvement. While this approach was addressing verbal feedback, the same principles apply to narrative feedback (see, Kogan 2013).



The bottom line is that feedback, whether written or verbal, must be “actionable”. This means we should include specific guidance for HOW to improve or enhance performance.

[F]eedback is formative, meaning that it happens in real time with the intent of helping the learner develop and improve. Feedback is designed to foster learning. Feedback is about current, rather than past, performance. It is meant to convey information reinforce strengths, and identify areas in need of improvement, “before it counts.” (Kogan 2013, 92).

In other words, formative feedback alerts the learner as to what they need to improve and how they can improve it at a time when making such improvements will help them to improve before it is too late.

If we offer feedback, no matter how constructive, with the final assessment, the student has no opportunity to develop the skills or knowledge necessary to meet the established criteria. Constructive feedback given at the mid-clerkship point is meant to provide the students with that opportunity. This is what the mid-clerkship workplace-based assessment is designed to accomplish.

Therefore, if we consider the “big picture” of the student’s place in the clerkship curriculum, we must consider all student performance in relation to what we have asked them to know or to be able to do by the time the clerkship rotation has been completed.

**Formative assessment, then, is driven by these three questions:**

- 1. What is the learning objective?**
- 2. Where is the learner’s performance in relation to achievement of that learning objective?**
- 3. How can we convey feedback that will help the student achieve that objective?**

Table 2, below, provides two examples demonstrating the difference between an evaluative statement and formative feedback.

*Table 2 Evaluative Remarks vs. Formative Feedback*

Evaluative Remark		Formative Feedback
<i>Learner present patient cases well</i>		Student researched pertinent topics after each patient encounter, which contributed to developing a reasonable differential and more effective discussion of patients. I encourage the student to continue this practice.
<i>Learner does not present patient cases well</i>	<b>Vs.</b>	The student did not address basic questions pertinent to the patient’s symptoms or suspected conditions during patient presentations or informal discussion. I recommend researching pertinent topics using ClinicalKey, UpToDate or other appropriate clinical databases before presenting patients. This will help to identify questions on topic and foster productive discussions about patients.

## WORKPLACE-BASED ASSESSMENT & ACCOUNTABILITY

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To be accountable to the public, medical educators must, despite these challenges, ensure that residents completing training can be entrusted to perform the tasks of the profession (i.e. the trainee must demonstrate the knowledge, skills and attitudes necessary to warrant trust in his or her ability to perform an activity independently) and are, at minimum, competent to practise unsupervised.<sup>16-18</sup> Workplace-based assessments can inform these decisions. (Kogan rater perspectives)

The same is true in undergraduate medical education. When we assess medical students accurately and give constructive feedback to improve, we will better serve the public's interest in having well-trained physicians who can provide effective healthcare. This societal goal is also recognized as a goal of assessment in GME.

## HOW CAN WPB ASSESSMENT HELP TO REDUCE UNCONSCIOUS BIAS?

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### What is unconscious bias?

Microaggressions are often the result of unconscious biases that lead to unintended discrimination against or degradation of those who are socially marginalized in a society, whether for skin color, gender, sexual orientation, age, language, origin, religion, disability, or any other characteristic. (Bellack 2015, 63).

Unconscious bias does not involve intention to hurt feelings or harm someone. It is sometimes referred to as implicit bias - a bias that we are not engaging in intentionally or that we might not be aware we have. Despite this, we might act upon a bias without realizing it. Reflecting on our own possible biases is helpful to become aware and is the first step toward committing to removing bias from teaching and grading.

When we use the terms unconscious bias or implicit bias we do not include explicit (intentional) bias. When someone is aware of a certain bias and acts consciously despite that awareness, this is a deliberate act to favor one learner or hinder another.

Some unconscious biases favor certain groups. We might imagine that this would cause no harm. However, favoring some learners means we implicitly overlook or disfavor others. This sort of unconscious or implicit bias creates an inequitable learning environment. See, Bellack, 2015.

Since actions that impose unconscious bias can negatively affect learners, they also have the potential to impact the learning environment as a whole. Educators, then, must commit to engage in practices that will guard against their own unconscious bias as well as address the possible biases of others in the educational process.

### **Clerkship grading at CoM-T**

In addition to implementing a process that seeks to promote fact-based assessment, the College of Medicine-Tucson also seeks to utilize workplace-based assessment to help reduce unconscious bias from clerkship assessment. This is also part of the college wide anti-racism initiative.

Director of AMERI, Kadian McIntosh, PhD, presented data on the intersection of student demographic data and clerkship grading at the UArizona CoM-T. Below is a chart summarizing key points from Dr. McIntosh's presentation.



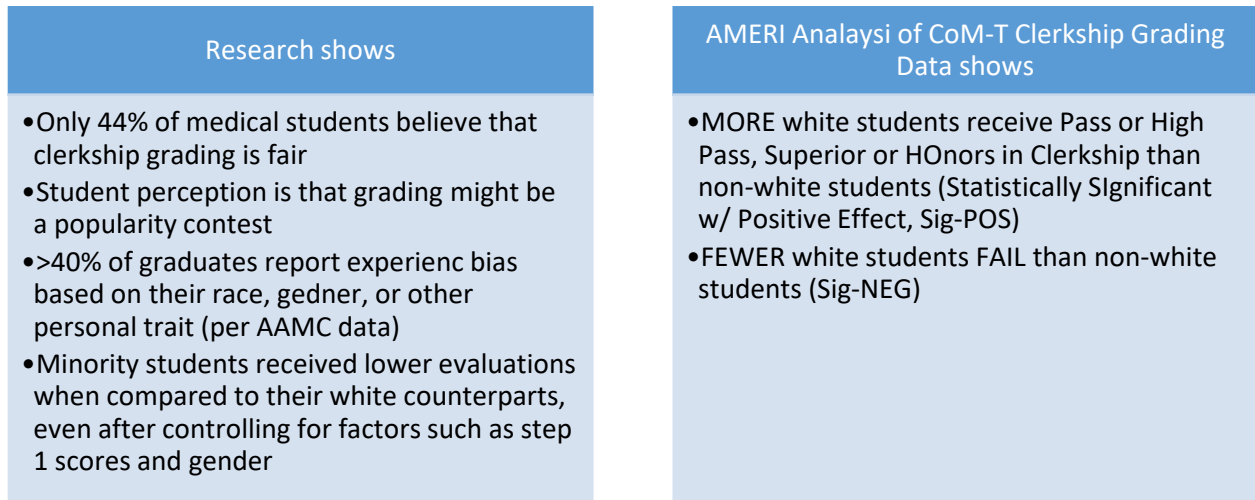
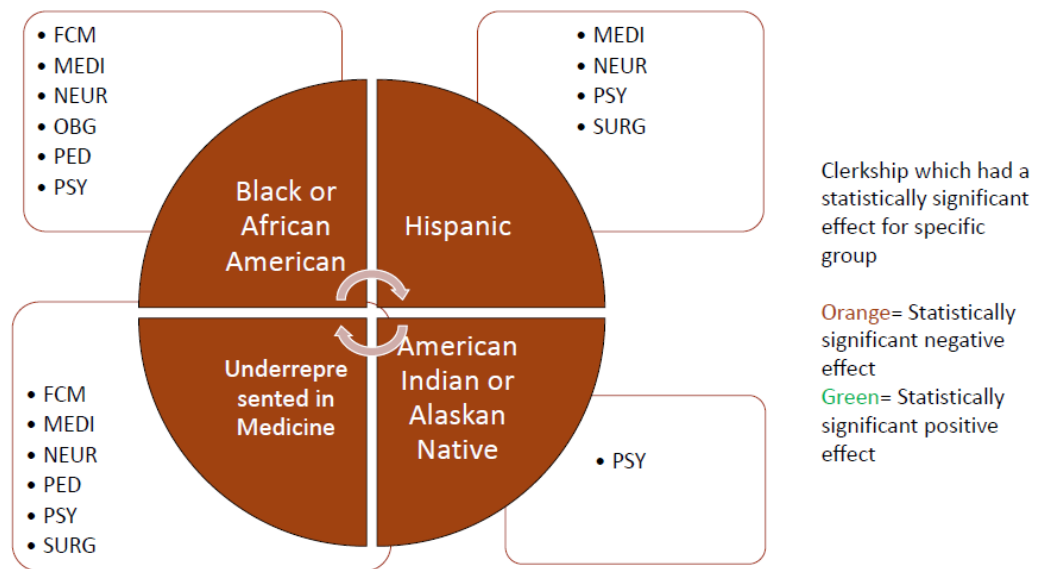


Figure 1 AMERI Presentation by Dr. McIntosh (July 17, 2020; p. 5).

### Clerkship Grades by Demographics



### Reducing Unconscious Bias in Clerkship Grading Requires a Multi-faceted Approach

The College of Medicine-Tucson has dedicated itself to eradicating this bias in teaching and grading. As you know it has launched the Anti-racism Initiative with several committees addressing various aspects of medical education, such as faculty development, curriculum and assessment.

Training and ongoing conversations with colleagues. The Office of Diversity, Equity & Inclusion is conducting college-wide training on this topic, and there are several committees working on anti-racism initiatives in a joint effort with the Office of Curricular Affairs.

Curricular Affairs is proposing to use workplace-based assessment in clerkship as part of its contribution to helping to remove unconscious bias from grading in clerkship because the essential components of WBA divert our focus away from generalized impressions or hearsay and towards observed performance.

- Assessment in REAL TIME while our memory is fresh
- Aligning assessment with established criteria KNOWN to the student.
- Anchoring assessment and feedback to descriptions of specific observations.

## USING WPB ASSESSMENT AS SUMMATIVE ASSESSMENT

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In addition, typically, WPB assessment is used to provide formative assessment to guide the improvement of performance. It is not, generally, used for summative assessment, and “its usefulness for summative assessment is not undisputed (Norcini and Burch 2007; McGaghie et al. 2009),” (Govaerts et al 2013, 376). The reason for the disagreement is that there is room for inter-rater variability the “inherent subjectivity and the resulting weaknesses in the quality of measurement” as when one evaluator assesses a learners ability to independently perform a skill while another determines the need for continued close supervision.

“In general, the idiosyncratic nature of (untrained) rater judgments results in large differences between performance ratings, low inter- and intra-rater reliabilities and questionable validity of WBA (Albanese2000; Williams et al.2003).” (Govaerts 2013, 376).

There has been much research done on the persistence of rater variability despite training (Govaerts et al. 2013):

- Raters have idiosyncratic theories of what makes for good or poor performance (e.g., Uggerslev and Sulsky, 2008)
- The complexity of the assessment context (local norms, time pressure, emotion or affective factors, etc.) may influence the assessment of individual performance (e.g, Levy & Williams, 2004)
- Conflating or “blurring” the competency domains of work performance vs. learner performance (Ginsburg et al. 2010)
- Differences between what faculty say they should do and what they do in practice (Ginsburg et al. 2010)

Thus, it would be prudent to have multiple data points to achieve fair and accurate assessment and reduce bias or error in the process.

Clerkship grading committees is another way to avoid rater variability issues and guard against the influence of unconscious bias (Frank et al. 2019). In that study, the faculty attempted to consider and quantify the narrative feedback comments in the WPB assessments as a contribution to grade calculation. This proved difficult but resulted in open conversation about the role of unconscious bias in grading.

“All participants felt that unconscious bias could affect assessments but were uncertain how to approach the problem,” (Frank, 672). Some felt they could be immune from unconscious bias when they had no contact with the learners directly but were instead calculating grades based upon others’ assessments. Frank et al (2019) study on grading by committee identified a number of potential implicit biases of

instructors, such as a preference for “go-getters”, gendered expectations for performance, and factors such as presenting as a high-end performer or demonstrating greater comfort in the clerkship.

## EDUCATOR DEVELOPMENT ON WPA

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Faculty development will be key to implementing workplace-based assessment in clerkship. We will need to anticipate the challenges for assessing novice learners. Curricular Affairs in partnership with the clerkships will align the assessment process with competencies and clerkship learning objectives to provide medical students and instructors with a clear understanding of expectations for performance in clerkship. “The successful implementation of competency-based education requires faculty development to improve the quality of WBA and ultimately patient care,” (Kogan et al).

“Workplace-based assessment has become an essential component of medical education because, ultimately, clinical supervisors must be able to determine if a trainee can be entrusted with the tasks or activities critical to the profession,” (Gingerich 2014, 1055).

Before the new workplace based assessment is launched in March 2021, we will train faculty, fellows and residents who teach in clerkship on the process and new form, to ensure they have the information, support and practice needed to perform the new assessment as intended.

The content of faculty and resident educator development will address these issues:

- (1) what workplace based assessment is;
- (2) the entrustment scale and its alignment with clerkship objectives and competencies;
- (3) the new form and how to access and use it;
- (4) exploration of unconscious bias and instructors’ theories of assessing learner performance and alignment with criterion based assessment; and
- (5) active learning exercises to provide opportunities to practice applying the new assessment form to learner cases and to evaluate examples of WPB assessments in comparison with competencies, Core EPAs and clerkship learning objectives.

### **Frequency & Type of Training**

Effective faculty development does more than simply one-off training sessions; it allows for faculty to utilize the knowledge and strategies and then to return for questions, feedback and further training to support implementation of new teaching or assessment practices (Sirianni et al. 2020). Therefore, the plan is to do both an orientation and ongoing development for faculty and residents.

As indicated above, we plan to offer ongoing support to faculty, fellows and residents. The logistics may well depend on when departments and residency programs can create opportunities for training. In addition we will provide online resources.

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